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SANTA BARBARA • SANTA CRUZ

VISIBILITY LABORATORY
SCRIPPS INSTITUTION OF OCEANOGRAPHY

SAN DIEGO, CALIFORNIA 92152

VisLab File No. 003

To: Commander
Navy Ship Systems Command
Attn: Code 03522

Subj: NASA Interagency Fund Transfer R-139; Visibility Laboratory activities under Contract NObs-92058 for May 1966 on the development for NASA of computer techniques for performing visibility calculations

The computer studies were interrupted during the month of May in order to undertake investigation of the lunar landmark question posed by Ames Research Center. A series of photographs of the moon taken at nine different lunar phases have marked on them seven different landmarks. The question which we were asked was, "Can we use existing computer techniques to produce a relative numerical ranking of detectability of each landmark under its various lightings?" All seven landmarks are not visible at all lunar phases, with the result that there are 37 specific objects to be considered. These 37 objects have been reduced to film transparencies and are being scanned in the Visibility Laboratory film scanner. Each of the 37 card decks resulting from the scanning will be processed on the computer. The processing will include the effect of the modulation transfer function of the human visual system for various optical magnifications in the viewing situation.

The crater project described last month has continued throughout the reporting period, although it is still too soon to attempt analysis of the results. Six observers are participating in the experiment. Cases completed include the 48 minute of arc target on a 3.8° background with a 100 foot lambert surround in the form of a 38° square. Three positions have been used for the target: on center, 36 minutes off center, and 72 minutes off center.

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S. Q. Duntley
Director
Visibility Laboratory

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Navy Ship Systems Command

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-2-

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